

430. The substrate support 410 is comprised of a first (upper) plate 420 and a second (lower) plate 445 (shown in Figures 4 and 5) having a slightly larger diameter than the upper plate 420. The substrate support 410 includes one or more alignment pin holes 435 disposed through an outer edge of the substrate support 410 to receive one or more alignment pins 550 (shown in Figure 5). The upper plate 420 supports a substrate during processing and has a surface area about equal to the area of a substrate to be processed so that there is minimal overhang of the substrate around an edge of the upper plate 420. The lower plate 445 generally has a first side that is connected to the upper plate 420 and a second side that is connected to the shaft 430. The upper plate 420 and lower plate 445 are typically fused together, for example, by clamping the plates 420 and 445 together at an elevated temperature for a period of time, typically without a bonding agent. Alternatively, the plates may be coupled by sintering, adhesives, mechanical means (*i.e.*, fasteners), and the like. The upper plate 420 is fabricated from ceramic, such as aluminum nitride. Preferably, about 95 percent pure aluminum nitride is used to enhance the thermal conductivity of the upper plate 420.

Please replace paragraph [0043] with the following paragraph:

[0043] Figure 4 is a cross-sectional view of the susceptor 12 shown in Figure 3. The lower plate 445 is also fabricated from ceramic, such as aluminum nitride. Preferably, about 95 percent pure aluminum nitride is used to enhance the thermal conductivity of the lower plate 445. The lower plate 445 includes at least one heating element, such as an embedded RF electrode (not shown), connected to one or more electrode pins 455. One or more leads 460 extend through the second side of the lower plate 445. The leads 460 extend through the shaft 430 to an RF terminal 480 connected to the RF power source 25 for grounding the susceptor 12. The power source 25 supplies power to the electrode to enable the substrate support 410 to heat a substrate to a temperature in the range of about 300°C to about 550°C. The lower plate 445 includes a vacuum passage (not shown) which extends through the upper plate 420 to a plurality of vacuum ports 425 disposed in a top surface of the upper plate 420 for vacuum chucking a substrate to the support 410. Alternatively, the vacuum passage may be

eliminated and the substrate held in place by surface friction or gravity. Additionally, the lower plate 445 includes a purge passage 540 and a plurality of lift pin passages 415 extending therethrough. The lift pin passages 415 are generally disposed radially outwards from the vacuum passage and the purge passage 540. The lift pin passages 415 extend from the lower plate 445 through upper plate 420, exiting through the top surface of the upper plate 420.

Please replace paragraph [0046] with the following paragraph:

[0046] The shaft 430 generally is fabricated from ceramic, such as aluminum nitride. Typically about 99 percent pure aluminum nitride is preferred to minimize thermal transfer between the substrate support 410 and shaft 430. The shaft 430 is generally tubular in cross section. The shaft 430 has an annular section that defines a central passage. A first projection and a second projection extend from the annular section. The first projection has a purge passage 540 and the second projection has a vacuum passage respectively disposed therethrough. The thickness of the annular section and the walls of the first and second projections are selected to minimize thermal conductivity therethrough.

Please replace paragraph [0047] with the following paragraph:

[0047] The shaft has a first end and a second end. The first end is connected (*i.e.*, fused, bonded or sintered) to the second side of the lower plate 445. One or more ceramic sleeves 440 and pin retainers 450 are disposed in the central passage of the shaft 430 and extend partially through the second end. The pin retainer 450 holds the one or more sleeves 440 in place to avoid excessive stress on the pins 455.

Please replace paragraph [0050] with the following paragraph:

[0050] In step 630, a process gas mixture containing an oxidizer, such as oxygen or ozone (O₃), and/or a carrier gas, such as argon or helium, and a carbon silicon gas